Revue de Traduction et Langues Volume 23 Numéro 01/2024
Journal of Translation Languages **مجلة الترجمة واللغات**
ISSN (Print): 1112-3974 **EISSN (Online): 2600-6235**
DOI: https://doi.org/10.52919/translang.v23i1.988

Comparative Study of Google Translate and Yandex of English Latin-Originated Legal Phraseology into Arabic: A corpus-based approach

Djeffal Sofiane
Mustapha Stambouli University of Mascara, Algeria
Sofian.djefal@univ-mascara.dz

To cite this paper:
Djeffal, S.(2024). Comparative Study of Google Translate and Yandex of English Latin-Originated Legal Phraseology into Arabic: A corpus-based approach. *Traduction Et Langues, 23(1),* 365-384.

Received: 24/03/2024; **Accepted**:08/06/2024, **Published:**30/07/2024

Corresponding author : Djeffal Sofiane

Keywords

Legal discourse, Machine Translation, Procedures, Terminology, Phraseology

Abstract

The use of machine translation has become ubiquitous across various translation practices, especially with the advent of neural machine translation and the integration of deep learning and artificial intelligence in translation program development. While the accuracy and quality of machine translation outcomes have significantly improved, challenges persist particularly in legal translation from English to Arabic. The unique nature of legal discourse and structural differences between English and Arabic make accurately translating legal language features a daunting task. This study aims to evaluate the quality of neural machine translation in rendering legal Latin phraseology into Arabic by comparing two websites: Google Translate and Yandex. A corpus-based approach was adopted where 270 Latin-origin legal terms and phrases were collected, scrutinised, and translated using both platforms. The evaluation focuses on four criteria: inappropriate translations, no translations provided, borrowing (phonetic transliteration into Arabic), and equivalence—the culturally and functionally suitable translation. Key findings indicate that despite significant advancements in machine translation technology, accuracy remains a critical issue, with approximately half of the terms not translated correctly. While Google Translate is widely used, Yandex demonstrated higher accuracy in this context. Furthermore, the majority of phrases selected for this study were not accurately translated by either website. The solution to this problem lies in enhancing the training process. Arabic users and translators should contribute more translations to enrich Arabic corpora online. Additionally, it's been observed that there is a lack of English-Arabic dictionaries or databases dedicated to Legal Language Processing (LLP). Therefore, initiating a research project addressing this issue could be of utmost importance. Regarding specialized language, improving the quality of Neural Machine Translation (NMT) raises questions about its reliability for both learners and professional translators. Accordingly, the study recommends further research on assessing machine translation quality, improving neural machine translation terminology accuracy, and enhancing machine learning models with more Arabic content and corpora.

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الكلمات المفتاحية

الخطاب القانوني، الترجمة الآلية، الإجراءات، المصطلح، الجملة الإصطلاحية

الملخص

تمثل الترجمة الآلية اليوم جزء مهماً من عمل المترجم، إذ يلجأ إليها المتمرن والمحترف لأسباب مختلفة، وازداد الأمر حدة في الآونة الأخيرة بعد تحقيق قفزات نوعية في مجال الذكاء الاصطناعي مما أدى إلى بروز نوع جديد من الأنظمة، والذي عُرف بالترجمة الآلية العصبية. بيد أن السؤال المطروح هو: هل يمكن الثقة في الترجمة الآلية بغض النظرعن نوع النص والخصائص اللغوية التي يتسم بها؟ من هذا المنطلق، تأتي هذه الدراسة بوصفها محاولة لتقييم مدى جودة الترجمة الآلية العصبية في نقل الجمل الإصطلاحية القانونية ذات الأصل اللاتيني التي تعج بها النصوص القانونية الانجليزية. وقد اتخذت من موقعي **Google Translate** و **Yandex** نماذج للمقارنة. تعتمد الورقة البحثية الحالية على ترجمة 270 جملة اصطلاحية لاتينية قانونية ترجمة آلية، وقد بينت النتائج أن الترجمة الآلية العصبية لا تزال عاجزة عن نقل هذا النوع من الجمل، إذ أن نصف المصطلحات لم تحض بترجمات صحيحة، كما أن محرك الترجمة **Yandex** كان أكثر فعالية ودقة من **Google Translate**.

1. Introduction

On its 10th foundation anniversary in 2016, Google launched a huge neural-based project of machine translation that imitates human brain in its cognitive process. The team, led by Yonghui Wu published their project, titled "*Google's Neural Machine Translation System: Bridging the Gap between Human and Machine Translation*" (2016) which represents a turning point in the history of the field. They assume that the new NMT technology will reduce MT errors by 60% of the previous Google's phrase based machine translation (Wu et al, 2016). Hence, NMT has known significant developments through the reliance on artificial neural networks, artificial intelligence, and deep learning. The quality as well as the accuracy of the outcome were the ultimate desire of scientists; the fact that led specialists and users of NMT to consider it as a real competitor to human translation. Besides, though the quality witnessed a considerable improvement at the level of different text types and linguistic features, a number of other peculiarities of specialized discourse are still unexplored, the case of legal Latin phraseology which represents a striking feature of English for legal purposes. Thus, the present study aims at answering the following main question: to what extent is NMT accurate in rendering Latin legal phraseology from English into Arabic? A set of sub-questions are raised:

- What are the main techniques of translation used by NMT in rendering Latin phraseology into Arabic?

- What are the main similarities and differences between Google Translate and Yandex at the level of performance?
- How does mistranslation of Latin legal phraseology affect the quality of the outcome?

The study postulates that the quality depends on the frequency and usability of the phrase; some phrases are used more than others in different contexts, which makes them more understood and easier to translate. The familiarity of the machine with phrases is of crucial, hence, the importance of machine training. Furthermore, the importance of such study lies in the fact that:

- Legal translation is one of the main types of texts that translators face in the industry;
- Latin-legal phraseology is a frequent and striking feature of legal discourse;
- The absence of Latin expressions in Arabic usage makes us wonder about the techniques that can be used by the machine in such cases;
- Testing the readiness and reliability of NMT in rendering such features;
- The lack of previous studies dealing with Arabic language.

In tandem with the above rationale, the paper seeks to suggest a methodology for machine translation quality assessment that relies on the pragmatic implications of the outcome. For the sake of the study, the paper analyses the outcome of Google Translate and Yandex of 270 Latin legal phrases into Arabic. The terms were gathered from different documents and legal databases, and selected on the basis of two main criteria: (1) frequency of usage, and (2) relevance to the research problem of the study. The methodology of analysis adopts a perspective of translation techniques that varies from the least quality to the highest: inappropriate translation, no translation, borrowing, and equivalence. As for the structure of the paper, the adjacent concepts and the theoretical framework of the study are tackled first, then, a systematic literature review is presented, the research methodology is detailed, and finally the results will be discussed.

2. Literature Review

2.1. Neural Machine Translation

Neural machine translation refers to the MT system that focuses on artificial neural networks (ANN) to generate translations. It appeared after witnessing the limitations of statistical machine translation, namely the quality of the outcomes when it comes to languages totally different from English, the weak apprehension of syntactic differences, the problem of rare and minority languages, etc. (Poibeau, 2017). NMT was developed to get over these challenges and to provide more elaborate translations (Tekwa, 2023). First of all, NMT uses an encoder-decoder framework: the encoder receives the input and transforms it into a set of representations via what is known as “artificial neural networks”,

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a simulation of human brain neurons, then, the decoder suggests a translation based on multiple complex operations of probalities and analyses (Cheng, 2019).

The advent of ANN was crucial in the development of NMT; ANN is a simulation of human biological nervous system. Like human brain, ANNs learn by example and training (Bowker and Buitrago Ciro, 2019). These neural networks are organized and presented in layers which are responsible for the processing of input through a series of interconnected nodes that contain activation function to respond to stimuli and handle the analysis of the source sentence (Bowker and Buitrago Ciro, 2019). Perez Ortiz et al (2022) explain the process of NMT; when a sentence is inserted in the engine of translation, two stages are undertaken; the first stage is called *the encoding* stage: ANN transform the source sentence into a set of numbers which will be multiplied by other numbers in order to test the semantic probabilities of the words that constitute this sentence, this process is called *representation*, each word from the source language is analyzed in isolation. In a second step, the representation is made at sentence level i.e. the results of analysis of single words will be selected with regard to the context, if a meaning does not fit the context of the sentence, it will be neglected. The second stage is called *the decoding* stage. During this phase, ANN predict target equivalents respecting the meaning of the whole source sentence through a technique called *attention* (the system keeps close attention to source words and their counterparts in the target language while producing the outcome). *(*Perez Ortiz et al, 2022).

NMT is characterized by a set of features:

- The use of Corpora: NMT uses huge amounts of data and translations that already exist on the net to provide translations. It is a developed version of data-driven or corpus-based machine translation (Forcada, 2017).
- The use of artificial neural networks: in a way to imitate human brain, NMT adopts a large number of neural units (or neurons) to process data and suggest good translation (Forcada, 2017);
- It is based on word sequence analysis in both languages instead of phrase-based one as it was the case of statistical machine translation (Pietrzak and Kornacki, 2021) the fact that can help overcome lexical and syntactic hurdles.

As for the techniques employed in NMT development, three main methodologies are adopted: supervised, unsupervised, and semi-supervised (Ranathunga et.al. 2023). Supervised NMT relies on attention and requires large parallel corpora, it is more applicable in widely used languages; unsupervised NMT is applied in the absence of sufficient parallel corpora by focusing on monolingual corpora. Unsupervised methodology goes through three steps: **initialization** (finding equivalents of input representations or making approximate relationships between languages); **back-translation** (in order to check the the original text with its multiple translations); and **discriminative classifier** (or adversarial architecture which refers to the use of a classifier

to distinguish the ST from TT). Finally, semi-supervised NMT tends to get the best of the two previous techniques; monolingual corpora with the available parallel ones (Ranathunga et.al, 2022).

There are multiple neural translation models (Koehn, 2020). The first and most obvious is the *encoder-decoder approach* which relies on neural networks to encode the input sentence in a sequential process. After processing the previous words of the sentence, the model predicts the next word till the end of the sentence, then, it focuses on the sentences that it gathered from training to suggest an output sentence. The *alignment model*, or sequence-to-sequence encoder –decoder model, is similar to the previous model but strengthened by alignment mechanism, or attention. *Training model* is another approach to NMT; it refers to the process of finding the computational graphs sufficient for encoding-decoding input sentences. Since sentences are not always similar at the level of length, training tends to deal with various sentence variables and lengths for a better prediction and processing, in machine translation, this is called unrolling. *Deep models* are the most advanced approaches of NMT; the concept is to add more layers of recurrent neural networks into the system architecture (Koehn, 2020).

Furthermore, Koehn and Knowles (2017) put forward six challenges for NMT; the weakness of the system out of domain, bad quality in low-resource settings, inability to deal with low-frequency words, weakness in translating long sentences, the incapability of attention model with word alignment in many cases, and the shortcoming at the level of beam search decoding. It seems that these challenges are strictly related to the present study in the sense that Latin-originated legal phraseology is considered low-resource settings when it comes to Arabic which does not have such feature, and in which training is generally lower than other languages.

2.2. The Notion of Phraseology

It goes without saying that the term phraseology has been used with a plethora of other concepts, sometimes with shades of semantic differences, but mostly interchangeably. Among the concepts used to refer to phraseology, we find: set phrases, phraseologism, collocations, idioms, colligations, phrasemes, etc. The problem of terminology has been highlighted by Nikolenko (2007) who argued that the problem is twice, problem of naming these "word-groups", and problem of analyzing and classifying them since there are various studies in this regard. Yet, the term of phraseological unit is used first in the Russian school of linguistics by Vinogradov (Nikolenko, 2007). According to Gries (2008), Phraseology can be defined regarding six parameters: the nature of its components, the number of its components, the frequency of its usage, the distance between its components, the lexical and syntactic flexibility of its components, and the semantic unity of its components:

- The *nature* of the lexical units that constitute the phraseologism: we can mention here the type of the words e.g. verb, noun, adjective, etc. or, more broadly, the field they belong to (legal, medical, economic, etc);
- The *number* of the lexical units that constitute the phraseologism: if the phrase in question is made up of two units, three, or more;
- The *frequency* or *number of times* a phrase is used such in order to be considered as phraseology: this is problematic since no linguistic rule gave us an answer to the question: when will a phrase be considered as phraseology and not just a simple usage of language?
- The *distance* between the lexical units that constitute a phraseologism: elements of phrases, needless to say, are not always used together, they can be split for grammatical reasons;
- The degree of *lexical and syntactic flexibility* of the lexical units that constitute a phrageologism: it is evident that the more lexical units are lexically and syntactically flexible, the less it will be conceived as phraseology;
- The role of *semantic unity* and *semantic non-compositionality* in defining phraseolgy: semantic non-compositionality refers to the fact that a phraseology cannot be understood by understanding the meaning of its elements separately as it is the case of idioms and fixed expressions.

In his study of collocations, Sinclair (1991) starts from the premise that there are two possible ways of conceiving language usage: (a) either language is a nomenclature of units, and for expressing a given meaning, one must use these units to fit his intended idea by collecting them and formulating grammatically correct phrases and sentences, this way is called *the open-choice principle*; (b) or language is an offer of semi-preconstructed and ready-to-use phrases that the user tends to employ them in his text\utterance, and this is called *the principle of idiom*. Hence, phraseology falls into the second type of perceiving language usage. According to Gries (2008) phraseology is the collocability or co-occurrence of a lexical unit with one or more others to form one fixed meaning while Bussmann (1999) insists on the semantic (and not grammatical) foundation of collocations.

Nikolenko (2007) puts forward the notion of “stability” as a feature of phraseological units; phraseologism is characterized by the stability of: use, meaning, lexical units, and syntactic structure. As for the question: when will a combination of words be considered as phraseology and not a free word combination, Rosamund (1998) mentioned three factors: (1) *institutionalization*, when the phrase becomes recognized by speakers as such (common usage, dictionaries, etc), (2) *lexicogrammatical fixedness* (or formal rigidity), and non-compositionality. According to Mroczynska (2023), studies on

phraseologism fall into three major frameworks; (1) frequency based approach, represented by Sinclair (2004), Kjellmer (1994) and others, which relies on the calculations and measurement of the frequency of collocations and the cases in which the collocation (node + collocate) has been used together (2) Phraseological approach, or semantic-oriented, it is represented by Cowie (1994), Haussmann (1997), and tackles collocations as semantically- linked units of meanings. Though the frequency of occurrence is important in this approach as well, the lexical relationship between the words of the collocation is more interesting. (3) the pragmatic-driven approach, represented by Siepmann (2005), which tends to understand collocations with regard to the context they have been used in.

2.3. Latin-Legal Phraseology

English for legal purposes is full of Latin-legal phraseologism (LLP); the influence of Latin as an ancient lingua franca, liturgical language, and ancestor of many modern European languages (e.g. Spanish, Italian, French, etc) led to the use of its expressions and concepts. LLP refers to all types of set-phrases, expressions, collocations or any other kind of the co-occurrence of two or more words from Latin language in modern legal discourse. Phrases as: *ad hoc, gravamen, in loco parentis, de facto,* etc. are widely used and conceived as an important feature of legal language (Beaudoin, 2009, Biel, 2014, Al-farahaty, 2014, Pontrandolfo, 2015, Orlando, 2018…). There are two main types of LLP: (1) **semantically-predictable phraseologism**, the kind of phrases that are easy to grasp for several reasons: frequency of use, simplicity of the lexical units... such as: *de facto, a posteriori, inter alia,…*and, (2) **opaque phraseologism**, phrases that are ambiguous and hard to understand for laypersons like*: locus sigilli, quo animo, filius nullius,…* LPP is characterized by: (1) semantic unity, the components of the LPP constitute one meaning, (2) context-independency, regardless of the context, LPP is always used to refer to one meaning, it cannot be influenced by the context, (3) determinacy, LPP is always accurate, clear and exact, it does not suppose multiple interpretations, and, (4) formal fixedness, which means that LPP is used in its original Latin form regardless of English morphology and syntax, e.g. *compos mentis* is a "strange" form in English, yet, the original is preserved.

2.4. Translation of Latin- Legal Phraseology into Arabic

As a Semitic language, Arabic does not employ Latin phraseologism. Rather, it tends more to use modern Arabic collocations and set-phrases to refer to different situations. In this regard, a set of techniques can be used; Baker (2011) puts forward six possible strategies of translating idioms: (1) using an idiom of similar meaning and form, (2) using an idiom of similar meaning but dissimilar form, (3) borrowing the SL idiom, (4) translation by paraphrase, (5) translation by omission of a play on idiom, (6) translation by omission of an entire idiom. Baker's typology of translation techniques of idioms can be summarised to mainly four techniques: equivalence, borrowing, paraphrasing, and

omission. However, when it comes to LLP, things are different since it is not about finding equivalent but also moving from archaism (Latin) to modern use (modern Arabic), this means that a loss of a part of the phrase is inevitable. Hence, the challenge, from machine translation point of view at this level, is to suggest a reliable translation regardless of morphological and syntactic considerations.

2.5. Previous Studies

In the literature, research investigating the translation of legal discourse through MT focused on one of the three perspectives: the translation of legal Latin phrases (human translation), the translation of legal language through MT, or the translation of all types of legal phraseology. Yet, the translation of Latin legal phraseology from English into Arabic needs to be tackled in thorough analysis.

Gampieri (2023) tested the reliability of MT in the teaching of legal language. She used Deepl to translate a corpus of passages taken from a distribution agreement from Italian into English. The study compares the outcome with an already prepared distribution agreement in English. The paper showed the inaccuracy of MT and it shortcomings in dealing with MT syntax and lexis' Gampieri (2023) argued that MT still needs improvements to be more effective and credible in teaching translation student legal discourse (Gampieri, 2023).

Biel (2015) explored the use and functions of complex prepositions and phraseology in multilingual EU law and Polish national law. The findings reveal that there is an overuse of complex prepositions in legal language in comparison with general language. At the level of frequency, EU law uses uses more prepositions than Polish national law. Biel (2015) put forward that the main reasons of such uses are: EU laws were developed from translation of meetings and events; the fact that may affect the quality of the legal language since all translation processes contain losses and deformations; the second reason, according to Biel (2015), goes back to the adoption of literal translation in the rendering of EU laws to European languages. Moreover, Berezewsky (2021) addressed the issue of translating Latin legalese from formal vs. dynamic perspective. He focused on the study of three languages: English, Italian and Polish. He highlighted the incompability and lack of some Latin expressions from English to Polish and vice versa calling for the creation of an up-to-date platform or corpus to help translators. In the same vein, Galuskina and Sycz (2013) compared Latin phraseology used in Polish, English, and French legal systems.

The paper starts from a misconception in dealing with Latinism which is the fact that Latin phrases should not be translated as Latin is conceived as an ancient global language. This solution is, according to Galuskina and Sycz (2013), wrong. For the sake of the study, the authors gathered twenty most frequent Latin phrases in Polish courts. They found out that Latin phrases, though used in three legal systems, do not refer to the same thing or they are used with different collocations. The phrase "erga omnes" (towards all), for instance, in the Polish system refers to the effectiveness of legal rights, in French

and English to legal provisions and in English international law to responsibilities of states (Galuskina and Sycz 2013, p.20).

Furthermore, Wiesmann (2019) tested the capacity of MT in translating legal texts from Italian to German in the pedagogical context. He relied on Deepl Translator and Mate Cat, and took into account two criteria; comprehensibility of the outcome and correspondence between the two texts. The study reveals the insufficiency of the outcome and the incapacity of implementing port-editing to students since the inaccuracies at the level of correspondence. Phraseology in legal settings has also been tackled in the didactic context, Huertas Barros and Buendia Castro (2017) explored the strategies used by 2nd year undergraduate students (University of Westminster) in dealing with phraseological units from English to Spanish. They focused on collocations as specific type of phraseology highlighting four criteria of evaluation; transfer (accuracy, completeness), content (logic, fact), language (smoothness, idiom,..), and presentation (layout,..). The study finds out that accuracy, sublanguage and idiomatic usage are the most challenging tasks for students (2017).

3. Methodology

3.1 Data collection and Analysis

The present paper relies on a corpus of 270 Latin legal phrases that were gathered from different sources and encyclopedias: *Gale Encyclopedia of American Law* (3rd Edition, 2010), *Gale Encyclopedia of Everyday Law* (2006), and *The A to Z guide to legal phrases* (www.plainenglish.co.uk). Phrases were selected on the basis of: 1. Frequency of usage, and 2. Relevance to the present research problem. The corpus was translated using two translation engines: Google Translate and Yandex. Then, the main solutions adopted by these two engines were noted and analyzed.

3.2 Procedure

The paper adopts a corpus-based approach. It deals with the main techniques used by Google Translate and Yandex. Google Translate was chosen because it is the first engine that adopted NMT system in 2016; it introduced this technology to the practice of translation. As for Yandex, it was selected because rare are the studies that focused on the analysis of its performance. Moreover, the study puts forward a methodology of analysis that relies on the exploration of the solutions that both engines adopt in dealing with LLP. The solutions whether accurate or not can be summarized as follows:

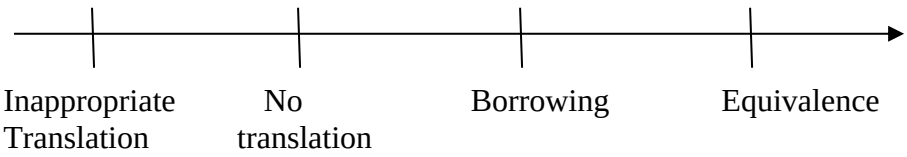

Figure 1. Methodology of Analysis

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4. Results and Discussion

4.1. Results of the First Research Question

The first research question seeks to explore the main techniques used by Google Translate and Chat GPT in translating Latin-legal phraseology; the purpose is to understand the mechanism and the process of NMT. The study reveals that Yandex suggested more accurate outcomes than Google Translate (table 1). The technique that has been recognized as efficient is indeed equivalence. Needless to say, there is no appropriate absolute equivalence since Arabic does not use Latin at all but, more precisely, a functional equivalence that is used and agreed upon by the community of the legal system. The other techniques, inappropriate translation, no translation, and borrowing, are considered wrong since they do not give any acceptable result in Arabic. Borrowing, one of the techniques of translation, cannot be perceived as a solution in this case in the sense that the transliteration of the LLP in Arabic is meaningless.

Table 1.

Findings on Accuracy: Google Translate vs. Yandex Translation

	Google Translate	**Yandex**
Accurate outcomes	33%	38%
Wrong outcomes	67%	62%

It transpires from the above-stated statistics that NMT, despite the aspirations, is still unable to deal with some linguistic peculiarities such as phraseology. 90 phrases of 270 have been translated correctly by Google Translate, which is a modest performance regarding the promises of NMT. Yandex succeeded in translating 105 phrases, which is less than half of the corpus. This difference in outcomes leads us to raise the question of attention in machine translation; corpora are the same, the difference lies in the attention mechanism adopted by each one during the training process. One of the solutions for translators is to use several machine translation systems, and compare the outputs; this may help them overcome the inaccuracies. In addition, there are 57 cases of correct similar translations suggested by both engines.

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Table 2.

The Main Solutions Adopted by Google Translate and Yandex

	Google Translate	Yandex
Equivalence	90	105
Borrowing	66	66
No translation	51	47
Inappropriate translation	63	52

4.1.1. Equivalence

Equivalence is the technique of translation that aims at finding the functionally appropriate equivalent in the target language. Hence, at the level of automatic translation of the LLP, Google Translate adopted equivalence 90 times while Yandex used it 105 times which makes the latter more efficient and accurate. In the context of this research, equivalence is the only "successful" technique since borrowing cannot be adopted regarding the nature of Arabic that does not accept Latin phrases. As for paraphrasing, which means explaining the foreign phrase in the target language, has not been used by both websites. Here are some examples:

Table 3.

The Use of Equivalence in Google Translate and Yandex

	Google Translate	Yandex
De facto	بحكم الواقع	بحكم الواقع
De jure	بحكم القانون	بحكم القانون
Ex post facto	بأثر رجعي	بأثر رجعي
Persona non grata	شخص غير مرغوب فيه	شخص غير مرغوب فيه

It goes without saying that the majority of cases in which both websites used equivalence suggested similar outcomes, except some particular situations that will be

discussed later. The phrase "*de jure*", for instance, is defined as legitimate or having fullfiled all the legal considerations (Gale Encyclopedia 2010: P.66), the Arabic translation بحكم القانون, which literally means *by law*, is a possible functional equivalent of the phrase. All Arabic alternatives, needless to say, are modernized versions of the LLP. This is the case for all the phrases that have been successfully translated: *ex post facto*, which refers to a retrospective regulation or law, has been rendered to بأثر رجعي (back translation: *retrospectively*). *Sui generis*, that means a unique thing, has been translated by Google Translate as فريدة, and by Yandex as فريدة من نوعها (back translation: *unique)*which are acceptable translations regarding Arabic legal jargon.

The notion of equivalence is a key-concept in translation studies. Yet, it had not been tackled by translation scholars in the same sense. Vinay and Darbelnet (1995) were the first scholars who suggested a deep analysis of translation techniques from comparative stylistics perspective. They define equivalence as a technique of oblique translation which consists in creating in the target language the same image expressed in the source using different words. Equivalence mainly deals with fixed expressions, idioms, collocation, phraseology, phrasal verbs, etc. Nida (1964) proposes a typology of equivalence on the basis of the position adopted by the translator; if he put forward the SL culture and readership, he will have a "formal equivalence" and if adopts the text with regard to target culture, he will get a "dynamic equivalence".

Catford (1965) uses the concept of "textual equivalence" and defines it as any passage in the TL that is recognized as equivalent to another passage in the SL. Newmark (1988) distinguishes three types of equivalence; cultural, functional and descriptive equivalence. Cultural equivalent refers to the replacement of a cultural phenomenon in the TL by another in the TL that is different but has the same effect. Functional equivalent is the translation of a cultural concept by a simple word; the aim is to reach the same function in the TL. Descriptive equivalent is the description of the cultural concept in the TL (Newmark 1988). Thus, equivalence, according to Newmark (1988), is strictly related to the translation of cultural specific concepts. Regardless of the different definitions and approaches of equivalence in translation studies, it always refers to accuracy and success of translation.

Neverthless, the overwhelming majority of LLP are still unexplored by NMT. A significant number of Latin phrases have not been recognized and translated by Google Translate and Yandex. Training must be focused more on rendering phraseology into Arabic to enhance its performance.

4.1.2. Borrowing

The table below demonstrates some examples of the use of borrowing by both engines. In translation studies, borrowing is the last solution of translation; the over-use of this technique, except for cultural purposes, is problematic.

Table 4.

The Use of Borrowing in NMT

LLP	Google Translate
Coram judice	كورام جوديس
Lex fori	ليكس فوري
Nisi prius	نيسي بريوس

Borrowing has been used by both engines 66 times out of 270 which is a huge number regarding the total number of the corpus. Having discussed equivalence as the most appropriate solution in dealing with LLP, borrowing is utterly the opposite. The transliteration of LLP into Arabic is a strange and inacceptable solution in the sense that Arabic does not accept such expressions. It is worth mentioning that NMT does not offer any explanation of the expression in the case of the absence of equivalence. Paraphrasing would be a better alternative of equivalence. Consider, for instance, the phrase *nisi prius* which means *unless before*. An explanation of this old English legal phrase into Arabic would be: إن لم يكن قبل ذلك or في حال لم يكن قبل ذلك. The expression *coram judice* means *before the judge takes decision*, both engines suggested a borrowed Arabic expression. A paraphrasing of this LLP could be: قبل القاضي. A worth asking question in this context: on the basis of what criteria does NMT adopt borrowing? In translation studies, borrowing is used in two main situations: (1) lexical gap in the TL or (2) cultural requirements. In NMT, borrowing is adopted in the first situation: The absence of LLP in Arabic. However, it has been noticed that in some cases, Google Translate uses no translation instead of borrowing (discussed in the next section). Hence, there is no rule that may explain the decision of the machine; it depends on the attention mechanism and corpora.

4.1.3. No translation

Table 5 indicates the cases where both engines did not suggest any solution. This is regarded as the worst solution to translation in the sense that it shows the translator's total inability to deal with the text\term:

Table 5.
The Use of No Translation

LLP	Google Translate
Nunc pro tunc	Nunc pro tunc
A mensa et thoro	A mensa et thoro
Filius nullius	Filius nullius

Google Translate tends to use no translation but keeps the same phrases in Latin letters. This is one of the weaknesses of NMT since it refers to the incapacity of finding the equivalent or at least explaining the phrases in the TL. The phrase *filius nullius* means *illegitimate child*. It can be rendered into: طفل غير شرعي but Google did not recognize the phrase, hence, a mistranslation that alters the liability and quality of NMT outcomes. It goes without saying that all the phrases above can be rendered into Arabic, there is no lacuna or lexical gap, the problem, it seems, lies in Arabic corpora.

4.1.4. Inappropriate translation

NMT suggested inappropriate translations in many cases (63 by Google Translate and 52 by Yandex). Inappropriate means totally wrong outcomes. After analyzing the findings, it seems that inappropriate translation is the result of either the mistranslation of one the lexical units that constitute the phrase or mis-apprehension of the syntactic structure of the phrase. The phrase *in terrorem clause* means a clause that threatens someone in a contract, a will or any other legal document. The unit *terrorem* has been considered by Google Translate and Yandex as *terrorism*; hence it had been translated into في شرط الإرهابand في بند الإرهاب *(in terrorism clause)* though it might be translated as: بند عدم المنافسة. The phrase *ex nuptial* has been translated as الزوج السابق (Ex-marriage) by both engines. The phrase refers to child or children born outside the marriage bond. The unit *ex* had been translated as السابق(the former) as a prefix while an appropriate translation could be خارج نطاق الزواج. Another example of inappropriate translation the phrase *Ignorantia juris non excusat* which means *no one is supposed to ignore law*.In Arabic, there is a conventional frequent expression: القانون لا يحمي المغفلين (law does not protect ignorants). Yet, Google Translate suggested meaningless expression:جهل جهل غير عذر and Yandex proposed fuzzy and grammatically wrong sentence: جاهل القانون غير عذر (ignorant

of law no excuse). It must be highlighted here that sometimes the phrase is frequent and widely used in the target language but NMT do not find the appropriate equivalent.

4.2. Results of the Second Research Question

The second research question aims at exploring the performance of Google Translate and Yandex. Obviously, Yandex seems to be more reliable at the level of translating LLP than Google Translate though the latter is widely used at different levels (users, academia, education, etc). In some cases, different solutions are used by both engines but with correct outcomes e.g. *sui generis* that has been translated as فريدة (Google Translate) and **فريدة من نوعها** (Yandex). Google Translate used concentration technique which is the translation of a lexical unit by decreasing the number of its constituents in the TL and preserving the same meaning (Delisle et.al, 1999). Yet, Yandex used equivalence (phraseology to phraseology). Also, NMT does not distinguish between archaic (Latin) and modern usage of language. E.g. *in camera* (in private) has been translated into **كاميرا** (modern camera). *Sini die* (indefinitely) was translated by Yandex as **شرط يموت** *(condition to die)* which is the result of mis-interpretation of the components of the phrase *sine* generally refers to condition as in *sine qua none* and *die* as in common English to die. The overwhelming majority of errors and inappropriate translations are due to the confusion between archaism and common English that constitute the phrase.

4.3. Results of the Third Research Question

The mistranslation of LLP affects the quality of the whole utterance. Quality of translation may be altered at the level of two main parameters: accuracy and adequacy. Accuracy in translation studies is defined as the extent to which the TT is similar to the ST (Shuttleworth and Cowie, 1997). Since the phraseology has been translated inappropriately (inappropriate, no translation or borrowing), the inaccuracies will be fragrant in the TT, the fact that will affect the quality of the outcome. It is to be noted that accuracy is always measured with regard to the ST, i.e. through a comparative analysis. Consider the following excerpt:

ST: “The U.S. Court of Appeals for the Ninth Circuit has denied John S. Pangelinan’s petition for a writ of coram nobis”. Saipan Tribune, May 20, 2023

Google Translate:

رفضت محكمة الاستئناف الأمريكية للدائرة التاسعة التماس جون س. بانجيلينان للحصول على أمر قضائي بكورام نوبيس.

Yandex :

رفضت محكمة الاستئناف الأمريكية للدائرة التاسعة التماس جون س. بانجيلينان لأمر قضائي من كورام نوبيس

The phrase *coram nobis* refers to a document issued by the court to correct the original judgement. It could be translated into Arabic as وثيقة تصحيحية or وثيقة استدراكية as an approximation of the original meaning. Both engines did not succeed in transferring the meaning of the LLP by borrowing it in Arabic. The fact that leads to an error of translation called nonsense. An Arab reader will have a problem of understanding the whole statement the phrase *coram nobis* in this sentence is an important unit.

The second parameter of quality is adequacy which refers to the realisation of the communicative purpose or skopos (in functionalist terms) of the translated text (Nord 2018). In the context of LLP, the communicative purpose is the transmission of specialized knowledge (legal). The inappropriateness of the outcome loses the adequacy factor. Likewise, adequacy in NMT can be measured regarding whether or not the outcome reaches the communicative purpose. In this context, the study finds out that, except in the cases of equivalence, Google Translate and Yandex did not preserve the same communicative purpose of the LLP (legal communication); the fact that alters the quality of the outcome. The phrase *in rem* (power exercised by a court over the world instead of specific persons) has been translated into في عيني (in my eyes) which has nothing to do neither with the meaning of the original nor with the legal field. Hence, it loses the communicative purpose of the original. It is worth mentioning that adequacy is the parameter that is the most related to lexical aspect of the text since terminology is the most striking feature that expresses the communicative event\purpose of a text.

5. Conclusion

The present study aimed at exploring the accuracy of NMT in translating Latin legal phraseology by comparing two translation websites: Google Translate and Yandex. The paper highlights the importance of integrating phraseology into NMT training regarding the importance and omnipresence of such linguistic feature in legal discourse. It reveals that NMT is still unable to deal with different usages of languages. The majority of phrases selected for the sake of this study were not translated properly by both websites. The solution to this problem would lie in the training process; Arab users and translators need to translate more in order to enrich Arabic corpora on the net. Besides, we have noticed that there is no English-Arabic dictionary or databases devoted to LLP; therefore, a research project dedicated to this issue might be of paramount importance. When it comes to specialized language, the quality of NMT needs to be improved which questions the issue of its liability for both trainees and professional translators. Further studies are

Available online online at https://www.asjp.cerist.dz/en/Articles/155

recommended to tackle the machine translation of lexical and stylistic peculiarities such as neologism, legal sentence structure, culture-bound legal terminology.

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Acknowledgements

I would like to express my heartfelt gratitude to the ASJP platform managers and the reviewers of Translang Journal for their tremendous efforts in revising and publishing this study. I extend my thanks to all those who support research in the field of translation studies.

Author Biodata

Dr. Sofiane Djeffal completed his PhD in Translation Studies at University of Oran1 in 2019. He currently serves as a senior lecturer at the University of Mascara, focusing primarily on digital translation and translation theory. Dr. Djeffal played a key role in a PRFU research project focused on developing a Spanish-English-French-Arabic legal dictionary. Additionally, he leads the MA program in Translation Studies at University of Mascara. His research interests encompass terminology, specialized translation, machine translation quality assessment, and translation didactics, as evidenced by his numerous published papers.

Declaration of conflicting interest

The author declared no conflicts of interest with respect to the research, authorship, and/or publication of the article.